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(71) Applicant (for all designated States except US): OPTI-
NOSE AS [NO/NO]; Lokkaskogen 18c, N-0773 Oslo
(NO).

(72) Inventor; and

(75) Inventor/Applicant (for US only): DJUPESLAND, Per,
Gisle [NO/NO]; Lokkaskogen 18c, N-0773 Oslo (NO).

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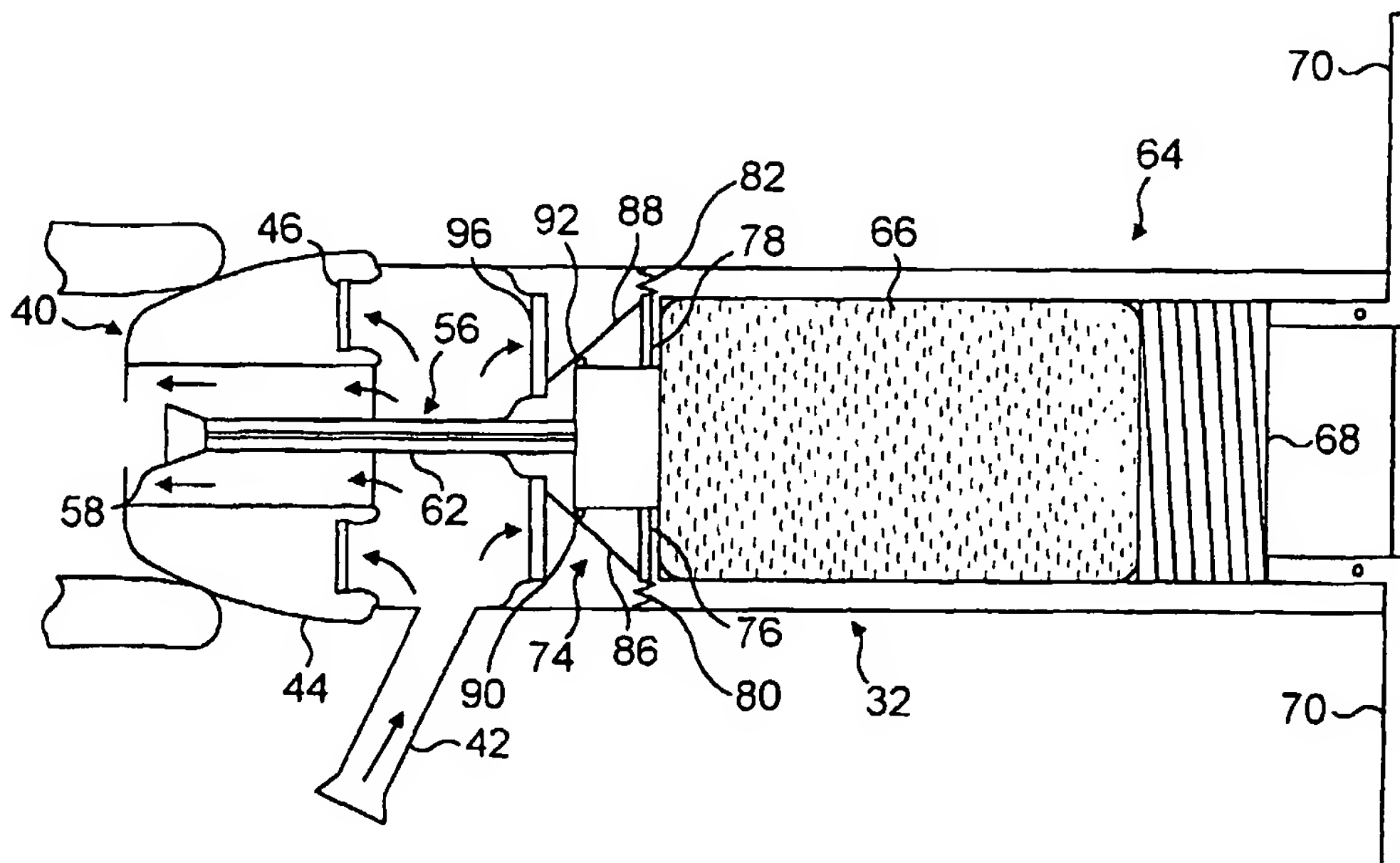
— with international search report

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[Continued on next page]

(54) Title: NASAL DELIVERY DEVICES



(57) Abstract: An exhalation breath-actuated nasal delivery device for and a method of delivering a substance to a nasal cavity of a subject, the delivery device comprising: a nosepiece (40) for fitting to a nostril of a subject; a mouthpiece (42) through which the subject in use exhales; and delivery unit (64), as one of a mechanical delivery pump (66) or a nebulizer (115), for delivering a substance to the nosepiece (40); and an actuation mechanism (74) for actuating the delivery unit in response to oral exhalation through the mouthpiece, and preferably when at least one or both of the pressure at or the flow rate through the nosepiece exceeds a predetermined threshold.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 02/01612

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61M15/08 A61M11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 51672 A (DJUPESLAND PER GISLE) 8 September 2000 (2000-09-08)	1-16, 47, 48
Y	the whole document	32-39
A	WO 00 35523 A (VALOIS SA ; STRADELLA GIUSEPPE (IT)) 22 June 2000 (2000-06-22) page 3, line 3 - line 4 page 8, line 23 - page 9, line 28; figures 1-4	1-16
Y	WO 97 31721 A (MEDIX LTD ; HOPKINS ANDREW DAVID (GB)) 4 September 1997 (1997-09-04) abstract; figure 1	32-39
A	WO 93 18812 A (GALLI ROSARIA & C) 30 September 1993 (1993-09-30) abstract	1-16
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *&* document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Valfort, C

INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 03267 A (ELECTROSOLS LTD ;COFFEE RONALD ALAN (GB)) 29 January 1998 (1998-01-29) page 2, paragraph 2 -----	39

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 02/01612**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 17-31, 40-46
because they relate to subject matter not required to be searched by this Authority, namely:
Method of treatment of the human body by therapy (Art.17.2.a.1) and Rule 39.1.iv) PCT)
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0051672	A	08-09-2000	AU 2822700 A	21-09-2000
			BR 0008650 A	26-12-2001
			CN 1342093 T	27-03-2002
			EP 1161274 A1	12-12-2001
			EP 1180378 A2	20-02-2002
			GB 2349092 A , B	25-10-2000
			WO 0051672 A1	08-09-2000
			NO 20014182 A	01-11-2001
			TR 200102563 T2	22-04-2002
WO 0035523	A	22-06-2000	FR 2787031 A1	16-06-2000
			WO 0035523 A1	22-06-2000
WO 9731721	A	04-09-1997	AU 2223197 A	16-09-1997
			CA 2219341 A1	04-09-1997
			EP 0833695 A1	08-04-1998
			WO 9731721 A1	04-09-1997
			JP 11504567 T	27-04-1999
WO 9318812	A	30-09-1993	IT 1257321 B	15-01-1996
			IT 1257471 B	25-01-1996
			DE 69319107 D1	16-07-1998
			DE 69319107 T2	25-02-1999
			EP 0632734 A1	11-01-1995
			WO 9318812 A1	30-09-1993
			JP 7505075 T	08-06-1995
			US 5546932 A	20-08-1996
WO 9803267	A	29-01-1998	AU 3628497 A	10-02-1998
			EP 0912251 A1	06-05-1999
			WO 9803267 A1	29-01-1998
			JP 2000516130 T	05-12-2000